

**TOP SECRET**

OUT 58253

1966 APR 18 23 19Z

P 182221Z  
FM NPICAFSSO PACAF  
AFSSO ACIC  
AFSSO FTD  
AFSSO USAFE  
CNO  
OPCENZEN  
**TOP SECRET**

CITE NPIC 6944.

**SUBJECT: CAMERA INFORMATION FOR MISSION 1831-1.**1. THE MISSION UTILIZED TWO PAN CAMERAS, FOUR HORIZON  
CAMERAS, A STELLAR CAMERA, AND AN INDEX CAMERA.**2. CAMERA DATA**

A. MAIN UNITS	FORWARD	AFT	STAR HOR	PORT HOR
FOCAL LENGTHS (MM)	609.577	609.602	FWD 55.00 AFT 54.90	FWD 55.00 AFT 49.90
FILTER (WRITTEN NR)	23A	21	25	25
APERTURE	F3.5	F3.5	F8.0	F6.3
SLIT WIDTH (IN)	.225	.150	1/100	1/100
EXPOSURE (SEC)				
FILM	3404	3404	3404	3404
RESOLUTION (L/MM)	185	199	N/A	N/A
B. S/I UNITS		STELLAR	INDEX	
FOCAL LENGTH (MM) PART 1		84.0713	38.3232	

19 APR 1966

Act

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utilized**TOP SECRET**

	PART 2	NA	NA
FILTER (WRITTEN NR)		NONE	21
APERTURE		F1.8	F4.5
EXPOSURE (SEC)		2.0	1/500
FILM		3401	3400
RESOLUTION (L/MM) PART 1			72
	PART 2		72

UNIT NUMBER	PART 1	D83/101/89
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	PART 2	D86/106/86
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### 3. LENS DISTORTION (PIN CUSHION) MM

A. MAIN UNITS	3	2	1	0	359	358	357
FWD UNIT	.002	.001	.000	.000	.000	.001	.001
AFT UNIT	.008	.004	.002	.000	.001	.003	.005

B. HORIZON CAMERAS (MM)	FWD		AFT	
	PORT	STAR	PORT	STAR
(RADIAL) 10 DEGREES	.050	.010	.020	.010
20 DEGREES	.100	.030	.070	.030
(TANGENTIAL) MAX VECTOR	.020	.025	.025	.030

### 4. CAMERA ANGLES

	DEG.	MIN.
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A. ANGLE BETWEEN PAN CAMERAS	29	46.10
B. DEPRESSION ANGLE BETWEEN HORIZON	FWD STAR	15 32.0
AND PAN CAMERAS	FWD PORT	14 58.7
	AFT STAR	15 30.3
	AFT PORT	15 13.5

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C. ANGLE BETWEEN STELLAR AND	PART 1	90	02.5
INDEX CAMERAS	PART 2	NA	NA

## 5. TIMING MARKS

FREQUENCY MARKS WILL APPEAR ON THE FILM AT A RATE OF 200 CYCLES PER SECOND.

6. IMAGE MOTION COMPENSATION DATA (CYCLE RATE(CPS), GROUND ANGULAR VELOCITY (GAV), AND PASSES WHERE USED).

REF. LEVEL			AMPL. LEVEL			PASSES
NO.	CPS.	GAV.	NO.	CPS.	GAV.	
7	.3484	.0308	6	.0816	.0074	1D1 THRU 7D2
6	.3582	.0324	7	.0642	.0058	8D1 THRU 62D1
6	.3582	.0324	5	.0963	.0087	65D1 THRU 111D1

## 7. PROGRAM TIME DATA

PASS	CAMERA ON TIME				PROGRAM ON TIME		PROGRAM
	(ZULU TIME)				UP RAMP		DURATION
	DAY	HR	MIN	SEC	SEC	SEC	
1D1	7	23	31	28	1337	41	
5D1	7	05	25	37	1084	163	
6D1	8	06	53	52	1001	158	
6D2	8	07	06	22	1752	145	
7D1	8	08	29	20	1352	102	
7D2	8	08	32	13	1525	113	
8D1	8	09	55	14	1024	43	
8D2	8	09	59	46	1296	130	
9D1	8	11	07	19	94	48	

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1001	8	13	04	07	1601	102
1101	8	14	38	06	1870	109
1401	8	19	14	47	2348	55
1601	8	22	00	39	1549	38
1701	8	23	17	01	747	65
2201	9	06	52	16	1192	39
2202	9	07	00	09	1664	259
2301	9	08	24	27	1350	37
2701	9	14	27	09	1619	87
2801	9	15	43	43	840	127
3001	9	19	07	28	2319	49
3101	9	20	27	33	1751	71
3201	9	21	54	06	1571	38
3701	10	05	09	50	852	292
3702	10	05	22	21	1603	28
3801	10	06	45	36	1226	39
3802	10	06	51	54	1604	182
3901	10	08	16	41	1320	231
4101	10	11	15	25	1299	102
4301	10	14	22	53	1805	93
4801	10	21	47	09	1603	38
4901	10	23	03	30	813	50

49D2	10	23	06	28	991	124
50D1	11	00	35	26	958	100
52D1	11	03	33	50	919	122
54D1	11	06	38	32	1259	40
54D2	11	06	46	23	1731	80
55D1	11	08	10	01	1378	199
56D1	11	09	37	54	1280	165
61D1	11	17	23	33	2370	40
62D1	11	18	52	58	2364	48
63D1	11	22	59	09	1086	132
68D1	12	03	32	18	1366	213
69D1	12	05	25	48	1606	173
71D1	12	07	59	52	1314	224
71D2	12	08	12	11	2053	63
72D1	12	09	29	56	1349	145
74D1	12	12	38	35	1929	99
74D2	12	12	42	50	2184	93
79D1	12	20	02	20	1710	39
84D1	13	03	23	03	1314	155
86D1	13	06	25	13	1508	145
87D1	13	07	48	23	1132	579
93D1	13	16	44	08	1079	67
95D1	13	19	53	43	1714	39
97D1	13	22	43	57	1196	80
100D1	14	03	18	11	1549	96

101D1	14	04	46	18	1470	61
101D2	14	04	53	33	1905	59
102D1	14	06	16	02	1488	101
103D1	14	07	40	06	1166	44
103D2	14	07	43	41	1381	371
104D1	14	09	12	26	1339	284
105D1	14	10	41	27	1315	48
105D2	14	10	43	53	1461	150
111D1	14	19	46	44	1805	25

NOTE: MISSION 1031 IS THE FIRST SYSTEM HAVING THE FIXED-TIME DELAY CIRCUIT ON (SLAVE) AFT PAN CAMERA OPERATIONS. THIS CIRCUIT DELAYS THE START UP AND SHUT DOWN OF THE (SLAVE) AFT PAN CAMERA FOR TWELVE SECONDS AFTER START UP AND SHUT DOWN OF THE (MASTER) FWD PAN CAMERA. THEREFORE, TO OBTAIN FOR THE (SLAVE) AFT CAMERA ONLY THE CORRECT CAMERA ON TIME IN HOURS, MINUTES, AND SECONDS AND THE CORRECT PROGRAM ON TIME UP THE RAMP FOR EACH OF THE PASSES LISTED ABOVE ADD TWELVE (12) SECONDS TO THESE TIMES. THE PROGRAM DURATION TIME REMAINS THE SAME FOR (MASTER) FWD AND (SLAVE) AFT UNITS.

#### 8. TIME CORRELATION (MILLISECONDS)

PASS	CLOCK TIME	SYSTEM TIME	DIFFERENCE
9	120214.586	40099.6833	-----
16	159425.683	79310.7938	MINUS .024
25	206262.125	39747.2532	PLUS .083

32	245448.743	78933.8867	MINUS .016
41	292259.221	39344.3845	MINUS .019
48	331446.544	78531.7251	MINUS .018
57	378247.271	38932.4743	MINUS .022
73	464227.670	38480.1451	-----
79	497946.250	72198.7457	PLUS .079
89	013299.083	38022.5163	MINUS .025
95	046988.636	71712.0818	MINUS .012
105	099213.656	37537.1149	MINUS .013
111	132931.340	71254.8033	PLUS .096

T O P S E C R E T

/END OF MESSAGE/

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